DOCUMENT RESUME

ED 455 796 IR 020 752

AUTHOR Voithofer, Rick
TITLE What Cultural Studies Can Teach Us about Educational Technology Research: Theory into Practice.
PUB DATE 2000-10-00
NOTE 11p.; In: Annual Proceedings of Selected Research and Development Papers Presented at the National Convention of the Association for Educational Communications and Technology (23rd, Denver, CO, October 25-28, 2000). Volumes 1-2; see IR 020 712.
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Cancer; Cultural Context; Discourse Communities; *Discussion; Educational Media; Educational Technology; Group Discussion; Instructional Design; World Wide Web
IDENTIFIERS *Cultural Studies

ABSTRACT

This paper describes the background to the problem and methodology of a study that explored a reflective new media pedagogy through the design and production of a Web-based learning environment. This environment addresses and invites cancer patients and their supporters to question established social and cultural discourses that shape the experiences of cancer by inviting visitors to create ways to talk about cancer that more closely relate to the uniqueness of their lives and to the characteristics of the disease. Through a collaborative approach to educational media design involving an educational media designer and cancer patients and their supporters, a Web site, http://www.cancershock.com, was produced to support cancer patients and their supporters in creating non-linear, flexible discursive spaces for rewriting social and cultural discourses that shape and inform the experience of cancer in Western, industrialized cultures. This interdisciplinary study presents a design practice influenced by cultural studies approaches to new media pedagogy and drawn from the experience of engaging in collaborative and reflective educational new media design. (Contains 55 references.) (Author/AEF)

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What Cultural Studies Can Teach Us About Educational Technology Research: Theory Into Practice

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Abstract

This paper describes the background to the problem and methodology of a study that explored a reflective new media pedagogy through the design and production of a web-based learning environment. This environment addresses and invites cancer patients and their supporters to question established social and cultural discourses that shape the experiences of cancer by inviting visitors to create ways to talk about cancer that more closely relate to the uniqueness of their lives and to the characteristics of the disease. Through a collaborative approach to educational media design involving an educational media designer and cancer patients and their supporters, a web site (http://www.cancershock.com) was produced to support cancer patients and their supporters in creating non-linear, flexible discursive spaces for rewriting social and cultural discourses that shape and inform the experience of cancer in Western, industrialized cultures. This interdisciplinary study presents a design practice influenced by cultural studies approaches to new media pedagogy and drawn from the experience of engaging in collaborative and reflective educational new media design.

Introduction

> Seriously ill people are wounded not just in body but in voice. (Frank, 1995, p. xii)

> If I were to demystify or deconstruct my cancer, I might find that there is no absolute diagnosis, no single agreed-upon text, but only the interpretation each doctor and each patient makes. (Broyard, 1992, p. 21)

> The most disorienting challenge to traditional thinking posed by developments in the postmodern era is the perception that illness is no longer a purely biological state – no longer a brute force of nature – but rather something in part created or interpenetrated by culture. (Morris, 1998, p. 70)

This paper describes the background to the problem and methodology of a study that explored a reflective new media pedagogy through the design and production of a web-based learning environment. This interdisciplinary study presents a design practice influenced by cultural studies approaches to new media pedagogy and drawn from the experience of engaging in collaborative and reflective educational new media design. It uses the design, production, and revision of a web site, http://www.cancershock.com (hereafter referred to as "CancerShock"), as an educational intervention to study the educational possibilities presented by a culturally informed new media pedagogy. CancerShock acts on behalf of cancer patients and their supporters to reframe notions of health, health care, and disease in ways that, compared to choices presented by traditional Western healthcare practices, are more supportive of the uniqueness of the daily lives of cancer patients and their supporters.

The pedagogy of CancerShock parallels a growing body of thought that calls for rethinking the care of chronic diseases like cancer in ways that have stronger connections to the cultural, subjective uniqueness of a patient's lived experiences (Broyard, 1992; Frank, 1995; Kleinman, 1988; Radley, 1993; Stacey, 1997; Treichler, 1992). This literature often refers to the notion of the "postmodern", (Morris, 1998), "postcolonial" (Frank, 1995) or "participatory" (Stacey, 1997) patient as one who actively creates their own ways (through non-linear personal narratives) of living with the disease versus being positioned by the pre-dominant rational, linear discourses of biomedicine. This study presents a culturally informed collaborative approach to educational technology design that tries to support a cultural intervention in healthcare and support discourses while offering a critique of current educational technology design models.

My critique of dominant forms of educational media design influenced by educational psychology shows an alternative approach that is guided more by theoretical frameworks contained within cultural studies (Grossberg, Nelson & Treichler, 1992) approaches to media study including poststructuralism and feminisms. The methodology of this study structures its inquiry around discursive contextualizations of the social and cultural issues surrounding cancer treatment, as well as, relating how these discourses form and interact with the participant's cultural models

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about healthcare. I use those discursive contextualizations to inform my collaborations with audience members in the design and revision of CancerShock.

The design principles that I developed for this study serve as a response to and a critique of traditional educational media design methodologies that seek to create media that deliver just the "right", predictable message to a knowable and definable audience. In other words, I worked with design principles that work under the assumptions that one can never predict the ways that an audience will interpret a media text and that media interpretation occurs at the fluid borders of the audience's subjectivities (Ang, 1996; Fiske, 1989a; Fiske, 1989b) rather than the center of artificially created, essentialized characteristics. These design principles are derived from a reflective practice (Schon, 1983) that continuously works to resist facile descriptions of the audience.

This study is inspired by the lived, currently unfolding, experiences of a friend who is undergoing treatment for ovarian cancer. In the summer of 1998, a friend (who I will call M.) and media collaborator was diagnosed with ovarian cancer. Alienated and angered by her encounters with dominant biomedical discourses and wanting a way to "rewrite" and make sense of her life with cancer, she became interested in reframing her experience from one dominated by the fragmented linearity of her health care to one that supports her fight against a disease that is profoundly non-linear and requires, not fragmentation, but a constantly responsive adjustment and juxtapositioning of scenarios, treatments and interpretations. Her approach to cancer underscores a trend in people's approaches to the treatment of serious diseases in which patients are demanding a greater voice in the treatment process and resisting the silencing and alienating practices of traditional medical discourses (Frank, 1995; Kleinman, 1988; Radley, 1993; Stacey, 1997). The intervention of this study is informed not only by M.'s experiences but also by my collaborations with other people with cancer and their supporters, as well as by emerging discourses currently being constructed by cancer patients about health and disease (Stacey, 1997). This is especially the case in light of current communication technologies like the Internet that allow easy access to information and provide for more opportunities to participate in support communities (Klemm, 1998). Because this study involved collaboration with other cancer patients and various family and friends of cancer patients, this intervention spoke not only to M.'s situation, but to a wider audience of people with cancer and their supports.

CancerShock was created to act as a model and workshop to help people with cancer to reframe their healthcare experiences in ways that resist the binaries that are presented to people with cancer and their supporters. These binaries include sick/healthy, patient/doctor, feeling good/feeling bad – binaries that serve to create static notions of disease and people with disease that allow and disallow specific ways of experiencing oneself with cancer. Through a collaboration with M. and a group of approximately thirty collaborators living with cancer or supporting someone with cancer, I created a social and cultural intervention that problematizes narratives about health, healthcare, disease, and quality of life that are presented to people affected by cancer (Frank, 1995; Kleinman, 1988; Morris, 1998) and rewrites those narratives so that they better support people's fight against cancer and their struggle to maintain particular senses of self and social positionings (Broyard, 1992).

The collaborations were used as a feedback and revisions mechanism for the web site through the use of an action-research oriented approach (Stringer, 1999) to educational media design that seeks to work with members of the intended audience to create the design, structures, and messages of the media. This approach allowed me to be reflective about my role as an educational media designer in ways that are responsive to the multiple subject-positions of educational media audiences. The design and production process included ongoing prototyping and discussions with cancer patients and their supporters.

Within the context of this study, the issues that were addressed revolve around how to use media as an educational tool to trouble and disrupt commonplace narratives and discourses about health and disease and to create new spaces in which to rethink the limiting ways that people talk about cancer. The stories that patients are told by medical professionals and that are implied by the time, space and aesthetics of cancer therapies, hospital rooms, and doctors' offices are the sites of intervention for CancerShock. CancerShock provides a set of activities and tools that offer its visitors (i.e. people with cancer and their supporters) an opportunity to (re)frame and (re)tell stories about fighting cancer.

The questions of this study related strongly to pedagogy and drew parallels between the art of teaching as a social and cultural approach and the science of teaching as an educational psychology approach. I developed a notion of new media pedagogy that is based on the idea of pedagogy as an artistic practice, a component of instructional design often alluded to by traditional cognitive-based theorists but rarely explored. Michael Milano and Diane Ullius in describing their book, *Designing Powerful Training: The Sequential-Iterative Model*, a traditional instructional design book write:

> The truth is that designing training is part art, part science; it requires both technique and creativity. The very best training designs exhibit a kind of alchemy, a transformation of content into activities that meet specific behavioral objectives. (Milano and Ullius, 1998)

In this study I began to name the artful parts of pedagogy as they relate to the design of educational new media. My pedagogical goal for this study was to find a new media pedagogy that is artful and therefore attentive to the interaction of emotions, memory, pleasure, desire, aesthetics, representation, and learning. These are all aspects of pedagogy that are considered in a cultural studies approach to pedagogy (Todd, 1997). Sharon Todd (1997) captures this notion:

> Moving away then, from essentialized views of oppression and subjecthood, pedagogy may be rethought as a process that gets tangled up in the nexus of social relations where identifications, fantasy and desire begin to emerge as pressing concerns with the field of the social. (p. 4)

In fact, cultural theorists of medicine have identified desire as the sick person's best medicine (Broyard, 1992). Because qualities such as desire are not easily definable, I explored a pedagogy that resists instrumentalization, an academic practice of containment. I developed a pedagogy for this particular project that acts as one way of approaching educational media design from cultural perspectives.

From a cultural perspective, pedagogy can be seen as invitations into a subject-positions. Therefore the new media pedagogy that I have created in this project is attentive to the subject-positions into which it invited its audience. The interplay between an audience's subject-positions, experiences of their disease and healthcare, and educational media represented important pedagogical moments.

Background to the Problem

Cancer introduces a myriad of complexities into the lives of those it affects. The emotional and physical struggles presented by this disease intersect with the multiple subjectivities of the people it touches. This calls for approaches to educational media design for this audience that have not been adequately considered by traditional approaches guided by cognitive learning theories (Dick & Carey, 1996; Smith & Ragan, 1999).

This project addresses the numerous ways that a person's multiple subjectivities impact efforts to create social interventions with respect to the complex issues raised by the treatment of cancer. For this study, subjectivities will represent the social positions that are offered by discourses centered around race, class, gender, cancer, biomedicine, etc. Subjectivity presents a central theme in a cultural approach to new media design.

An important question that always must be addressed when considering a media intervention such as this is, "Why use media instead of another pedagogical or non-pedagogical intervention?". What is gained and lost in the decision to construct meaning in this manner? This question can be addressed specifically to this project. Part of the answer to this question can found in the trend that more and more individuals are educating themselves about cancer through the Internet (Eysenbach & Diepgen, 1999).

In this study I not only explored using media like the Internet to respond to socially and culturally circulated discourses, but I investigated how a dispersed medium like the Internet broadens the field of discourses in which one becomes inscribed through the subject-positions offered. If traditional biomedical discourses, with their centralized and hierarchical structures, try to create fixed subjectivities, how might the dispersed medium of the Internet create the potential to encounter beliefs and truths which we may never have been encountered? The Internet, as a medium and source of information and communication raises many questions regarding traditional Western, modernist understandings of certainty, binaries, and progress. If the Postmodern critique of modernist notions of progress, objectivity, and binary truths (i.e. sick/healthy) values the world as a continuum (Lyotard, 1984), the Internet as a postmodern process makes such modernist understanding less feasible.

Many people who are faced with cancer use the Internet to research the disease and to communicate with others who confront cancer (Eysenbach, 1999). A search on the Internet for cancer-related sites revealed numerous web sites that reinscribe the rational discourses about cancer that this study works to disrupt. Despite the plethora of information that is available on the Internet about cancer, as Braddock, et al. (1999) found, fewer than ten percent of all patient decisions are well informed. This could be attributed to many factors including poor information, however studies have found that a great deal of the information provided on the Internet is accurate and up-to-date (Kiley, 1998; McLeod, 1998).

It is important to note that much of the medical literature focuses on techniques to evaluate the accuracy of Internet-based cancer information (Biermann, 1999; Gagel, 1999) but none addresses decision making using these techniques. This indicates that while many people are getting information each other about possible treatments they

are not putting this information to the most effective use. Patients and their supporters are not taught what to do with all this information. They are aware of many of their options but are unable to make the most informed medical decisions within those options.

By placing CancerShock within the context of other cancer-related web sites, CancerShock offers an alternative set of perspectives that may begin to provide new contexts to make sense of information about cancer and cancer treatment that is always in flux and changing. The results of this study show that this context could not be discovered/constructed by using traditional forms of educational media design. An innovative form derived through cultural theory was required.

The approach to educational media design that I explored in this study does not recognize educational media design from a strictly scientific perspective in which meaning is seen as being injected by media into audiences (i.e. students) while researchers examine the results of this "treatment." Rather, I explored how educational media designers might acknowledge and work with the ways that media consumption is not only a cognitive experience, but also an embodied and culturally-situated experience that actively engages and invokes memory, history, desire, and senses of time and place (Ang, 1991; Ang, 1996; Fiske,1988; Morley; 1992; Radway, 1984). This approach to educational media design rests on the assumption that the meanings people make as they use media are highly situated within their daily lives and are shaped by their generalized views about the world (Morley, 1986). on the Internet and communicating with

Cultural Models

> The illness narrative is a story the patient tells, and significant others retell, to give coherence to the distinctive events and long-term course of suffering. The plot lines, core metaphors, and rhetorical devices that structure the illness narrative are drawn from cultural and personal models for arranging experiences in meaningful ways and for effectively communicating those meanings. Over the long course of chronic disorder, these model texts shape and even create experience. The personal narrative does merely reflect illness experience, but rather contributes to the experience of symptoms and suffering. (Kleinman, 1988, p.49)

While people respond to media through generalized worldviews (Hall, 1973; Morley, 1980; Morley, 1991) or cultural models, important insights can also be gained by how the knowledge that people construct using media supports, contradicts, and modifies their cultural models. My use of cultural models was influenced by Strauss & Quinn (1997) and Gee (1996). Strauss and Quinn's conception of cultural models tries to understand opinion formation by showing how individuals negotiate attitudes based upon internal schemas that are influenced by social and cultural contexts. These schemas can be identified in the kinds of stories that people tell about their understandings of the world (i.e. disease), therefore I continually drew parallels between cultural models and narratives – the later providing an indication of the former.

Gee calls cultural models, "pictures of simplified worlds in which prototypical events unfold." He notes that people are often unaware of their cultural models and therefore cultural models appear to be "natural" and inevitable even though cultural models vary across social groups and change over time. This "naturalness" can potentially lead to individuals seeing cancer and its treatment in ways that harm cancer patients by preventing them from considering every possible medical, emotional, spiritual, and physical opportunity to fight the disease – or of creating yet unimagined ones.

According to Gee, "They [cultural models] allow us to function in the world with ease, but at the price of stereotypes and routinized thought and perception." Cultural models form the basis of choices and guesses about meaning within particular communities (i.e. healthcare, media production). They always include a conception of what is acceptable and unacceptable to do within that cultural model. For example, when one enters the world of biomedicine to be treated for cancer, one begins to take on the cultural model of a cancer "patient." This causes people to act and speak in certain predictable ways about cancer. As Gee notes, "It's not just what you say, or even just how you say it, it's always who you are and what you're doing when you say it."

Strauss & Quinn's work indicates how people's cultural models interact with each other and how they interact within various contexts. Cultural models vary in both content and form. The process of cultural model interaction can take the form of "integration"; as people modify their cultural models to make them more consistent with each other. They also observe that people are capable of possessing inconsistent cultural models without experiencing a sense of dissonance. For example, someone who is traditionally questioning and skeptical may place more unquestioned faith in a doctor or medical institution. They call the process of maintaining two inconsistent models "compartmentalization." According to Strauss and Quinn, belief systems are partly integrated and partly compartmentalized. Because challenging received narratives about healthcare existed as an important goal of this

study, how the audience integrates and compartmentalize the messages of the media within their cultural models presented a consistent focus of this study.

While I draw on the work of Strauss, Quinn, and Gee to frame cultural models, I also work with postmodern approaches to address how people make sense of texts. Postmodern perspectives that examine the way audiences interpret media texts highlight the paradoxical relationship between a text and the contradictory identities, positions, imperatives, and experiences within the audience (Ellsworth, 1997). This study balanced generalized statements about individual's cultural models while acknowledging that people are not fixed by their cultural models and maintain agency through their multiple and intersecting subjectivities.

Educational Media Design

> The scientism of psychology is motivated by a fear that the world cannot be mastered, i.e. known directly and certainly, with scientific method. What is manifested here is a desire for 'presence' where the world can be know in an unmediated way. The unmediated and therefore certain knowledge is considered possible in principle but, equally, the possibility of presence is thought of as always under threat; a threat whose source ultimately lies in mediation in its various forms. (Usher & Edwards, 1996, p. 56)

Whereas empirical approaches to thinking about the audience of educational media often ask questions that fix the audience's subjectivities and cultural models by addressing them through essentialized descriptions produced by a "learner analysis," culturally informed approaches to inquiry frame media interpretation in terms of an individual's multiple and fluid subjectivities. For example, while a learner analysis is more likely to reveal characteristics about potential audience members including their skill levels and literacies (i.e. reading, math, etc) or attitudes about a particular concept, a culturally informed approach is more likely to problematize notions of "skill" and "literacy," articulating how they are the result of power structures based on race, class, gender, ethnicity etc. A culturally informed approach offers a language of speaking about the audience's attitudes about a particular idea (i.e. healthcare) that could directly address how their subjectivities help to form that attitude.

This approach is presented to counter theories of media design based on educational psychology, an approach which represents the dominant discourse of educational media design and as Usher and Edwards (1996) indicate, is based on notions of certainty and mastery. Traditionally, educational media design has been influenced by cognitive theories (Reigeluth, 1999) that in varying degrees isolate the mind from the social contexts in which a person learns and constructs knowledge. Developments in cognitive psychology have conceded the importance of the social context of learning in the development of "situated cognition" (Brown, 1989). Situated cognition has developed on the assumption that authentic activities (those rooted in the culture and practices of a community) are the most effective activities for developing useable, robust knowledge. While making strides towards a consideration of social and cultural processes, situated cognition still valorizes the individual mind as sense making instrument and does not problematize what is a useable, robust language. For example, it doesn't ask, "knowledge that is usable by whom? to do what? for whose benefit?".

The seemingly neutral manners (i.e. "unbiased" in its treatment of culture, race, class, gender, etc.) that the "learner" is constructed using psychological descriptions impacts the ways that the design process of educational media is carried out, and ultimately in the nature of the materials produced and the methods that are used to assess individuals after undergoing instruction. For example, many instructional design models engage in a "front end analysis" (Dick & Carey, 1996) in which one part of it attempts to summarize the characteristics of the learner based on such items as reading/math levels, test scores, and the results of questionnaires. This front end analysis leads to descriptions of a learner who is targeted with a set of learning objectives that are to be mastered through the activities using the educational media produced. This methodology often leads to essentialized descriptions of the learner and narrow, easily evaluated learning outcomes. This is similar to the way the medical model traditionally treats patients (i.e. based on fixed, observable, and assessable notions).

Despite its aspirations towards objectivity, educational psychology nevertheless represents a subjective treatment of the issues that define it as a field of inquiry. Its definition of individuals as "learners" is based on specific historical antecedents that have become reified over time and institutionalized through social mechanisms. The labels that are applied to groups and individuals in educational psychology carry with them inherent hierarchical power structures that occupy histories. "Student," "learner," "learning," "teacher," "knowledge," "motivation," and "evaluation" all posses situated expectations and constraints, yet such labels are rarely problematized in educational psychology as they are operationalized. This reification and institutionalization has been an important, if unconscious, objective of educational psychology's desire to be considered a "normal" science (Kuhn, 1970).

Practices within this discipline have produced power structures between the learner and those administering (and evaluating) the learning that values certain ways of knowing by specific types of "learners" over others. These epistemologies influence traditional educational media design models because they are biased towards specific instrumental (i.e. memorization-driven, skills based, problem solving, etc) ways of knowing. Measuring and enhancing learner performance has a long history in educational psychology and exists as one of the founding charges of the field beginning in the early 20th century (Danziger, 1990). Educational psychology, through its "scientific" claims of being the defacto authority in measuring learning, has as its primary mission the measurement of success and failure (Danziger, 1990). Educational psychology proposes to measure learning and its effectiveness through technologies that include "deficit models" and "learner motivation".

Deficit models tend to have strong racial, classed, and gendered undertones (McKay & Wong, 1996), yet they are unable to adequately articulate why these "deficits" are structured into a particular educational setting and the complex ways that they intersect within the individual. While extensive literature has been written about pedagogical issues relating to race, ethnicity, class, gender, and sexuality, little of this literature has influenced the theoretical work done in educational media design. This study will work towards bridging this gap. This is not to say that cognitive approaches do not address learning in social settings, however, by their very nature they are unable to adequately theorize educational issues related to the inter-relationships between race, ethnicity, class, nation or gender except to look at these items in terms of quantifiable measures of performance and motivation.

Traditionally, instructional design theorists have looked at "learner motivation" from the perspective of narrowly defined conceptions of motivation. Keller's ARCS model (Keller, 1983) is typical of such an approach that ignores how motivation and satisfaction are culturally dependent (i.e. influenced by cultural models). This study examined learning using media as the result of desire rather than the result of an abstract notion of motivation. Such an approach borrows from theorists who have discussed the relationship between desire, media spectatorship (Bordwell & Thompson, 1997; Fuss, 1992; Mulvey, 1975), and education (Todd, 1997). These ideas are represented in film and television theories of narrative.

Film theory provides insights into this approach by addressing how notions of anticipation, expectation, surprise, desire and voyeurism are meaning making devices for media interpretation (Mayne, 1993). Television theories of narrative, in contrast to film theories, depart from traditional realist narratives that try to construct a self contained, internally consistent world. In a realist narrative everything makes sense within the structure of the narrative, but, of course, this does not always occur in everyday life where many narratives don't end in tidy resolutions. Television, according to Fiske (1988) invites the reader into "producerly" relations with the text, especially in relation to the most common type of television narrative, the serial. Soap operas offer a good example of television narrative that start from a place of disequilibrium and never reach a point of closure. Even series, like situation comedies, that reach a conclusion at the end of each episode, never resolve ongoing conflicts. These ongoing conflicts either exist within character relationships or the situations that they encounter within their settings.

Television theories of narrative offer fractured constructs of narrative due to television's serialization and commercial breaks. This fractured structure creates conceptual spaces for greater variation in interpretation by the reader. Television narrative according to Fiske (1987), "must be able to build into it contradictions that weaken its closure, and fragmentation that denies its unity." These fragmented narratives serve as a more productive model with which to represent the narratives of everyday life with cancer and provide an appropriate model to think about the design of a web-based learning environment such as CancerShock. Such models of narrative can better support a design process that allows for multiple interpretations of media based on a person's multiple social positions.

Mode of Address

The analytical concept of "mode of address" was used throughout this study as a lens with which to examine the social and cultural position(s) media offer to an audience, as well as interrogate a new media pedagogy for the ways that educational media offer meanings and understandings. Mode of address was developed by Althusser (1971) as a way to talk about how discourses (through address) hail people into particular subject-positions – positions that have implications for the way that people can and can't exist in the world.

Ellsworth (1997) develops the idea of mode of address to raise questions about pedagogy and to ask "who does a piece of media (or pedagogy) think you are" in terms of your subjectivities (i.e. race, class, gender, religion, ethnicity, etc). She describes modes of address as the relationship between social aspects of a text (i.e. media text, structure) and the individual experiences of a text (i.e. reader's interpretation, emotional reaction, etc.). While media interpretations are varied, some readings are more likely than others, depending on a media's mode(s) of address, as well as a person's cultural models. Ellsworth develops the parallel between mode of address of media interpretation and the mode of address of pedagogy and argues that, like media texts, all pedagogies miss their audiences/students because what one learns is never exactly what is taught.

The ways that media/pedagogy miss their audience is an important notion for Ellsworth who reasons that the difference between address and interpretation is a productive space for teachers. She makes the claim that this space is a social space, an uncontrollable space that "bears the traces and unpredictable workings of the unconscious" (Ellsworth, 1997, p. 38) and a space that can be put to use by teachers through it's indeterminacy. I build on Ellsworth's work about address to show how the design of educational new media can use a culturally informed design approach that works with this productive space by acknowledging the ways that media audiences are indefinable and educational media interpretations are uncontrollable.

Decisions in media design are based on (often unconscious) assumptions about who the user is in terms of her or his race, class, ethnicity, sexuality and gender and what cultural competencies s/he possesses (Kress, 1999). Users must take up the offered metaphors and structures and negotiate their own meanings. The reader (or in the case of healthcare, the patient), however, is rarely fully aware of who the text (or treatment) thinks s/he is. Often, multiple modes of address occur simultaneously, adding layers of complexity to individual interpretations, confounding the intended logic of a text. These notions of media interpretation borrow from cultural studies approaches to media theory.

Cultural Studies

Cultural studies is a difficult field to define because it is not a traditional academic discipline grounded in a monolithic theoretical foundation. It borrows from literary history, sociology, history, linguistics, semiotics, feminisms, philosophy, anthropology, and psychoanalysis (Grossberg, Nelson and Treichler, 1992). Cultural studies has been adapted to the countries in which it is practiced including the US (Campbell & Kean, 1998) , the UK (Turner, 1996), and Australia (Frow & Morris, 1993). This is significant because an important component of cultural studies is that it defines culture as dynamic and based in local contexts and histories. In addition to being developed in cultural studies programs, it's theories and methods are incorporated into traditional disciplines (and have disrupted the assumptions and practices of entire academic fields) including communication studies, media studies, history, anthropology, sociology, law, medicine, political science and education.

Cultural studies can best be described as an approach to inquiry that focuses on the connection between social relations and meanings and the ways that social divisions are made meaningful. This approach generally has a political intention that seeks to illuminate the subordination of one group under another. In cultural studies the production of knowledge is always seen as either done in the interests of those who hold power or done by those who contest that hold. According to this perspective culture is partially framed as the subordination of non-dominant groups by the interests of dominant groups. In addition, culture is also seen as the resistance to this subordination. Culture, in this context, is therefore revealed as a site of social struggle. This struggle is exposed by cultural studies to show how class, race, gender, and other sources of inequalities are naturalized and represented in forms (often through media) which break the connection between these and political and economic inequalities.

Cultural studies approaches to the study of media representations and media interpretations have developed as a counterpoint to traditional media reception research that look at generalizable "media effects" (Halloran, 1970) (i.e. watching medical shows like ER causes people to have distorted perceptions of healthcare). Instead, cultural studies are more likely to look at the representations of a show like ER and see how people put those representations to use in their day-to-day lives (Morley, 1992). Cultural studies approaches to media reception stress the importance of viewing media in the context of one's day-to-day life.

In order to discuss the methods that I mobilized to develop the design, production and revision of CancerShock, I will now review in greater detail the questions, methods, data sources, results and implications of this study. I'll address the design of the study, as well as describe each phase of the study.

Study Design

The study was divided into three phases: 1) Contextualization 2) Design and Production 3) Collaboration and Revision. The contextualization phase included a literature review that examined the notion of subjectivity in relation to discourse and agency and identified current discourses about disease and healthcare. The literature review included a description of how a culturally informed educational media design approach contrasts to traditional forms of instructional design, especially constructivism. In addition, the contextualization phase explored what kinds of cancer-related web sites are on the Internet and looks at the present discourses surrounding approaches to cancer treatment by patients and supporters through an examination of discussions on Internet mailing lists. The design and production phase included the first iteration of CancerShock as it began the production processes. The collaboration and revision phase included work with individuals fighting cancer and their supporters to revise the site. This final phase used an action research approach to constantly challenge the praxis of the underlying theories of this study. Along with this general account of the study, I will now include a more detailed description of each phase.

Contextualization

The contextualization phase involved finding out what discourses are made available to people on the Internet seeking information and support related to cancer, as well as examining what people talk about (i.e. with what narratives and cultural models do they identify) when using the Internet for communication about cancer. The first question was explored by undergoing a search using five popular search engines (e.g. http://www.altavista.com/) and Internet portals (e.g. http://www.yahoo.com/) searching for the word "cancer." The top 50 sites that the search produced were coded by general categories and summarized. In addition about 25 of the sites (10%) were analyzed for their mode(s) of address. The results provided insight into what was available to people who search for cancer-related information and support on the Internet.

To answer the question about how people use the Internet for support related to cancer, transcripts of four electronic mailing lists were examined for the themes and narratives of cancer addressed by people on the lists. A discourse analysis provided insights into the prevailing ways that people with cancer and their supporters approach cancer treatment. This information was filtered through the literature of cultural critiques of Western medical model discourses. The findings mirrored many of the perspectives presented in the cultural critiques.

This first stage of the study supported the initial hypothesis about the social construction of cancer in Western societies. It sustained the notion that individuals mostly subscribed to the subject-positions and linear, rational approaches to the disease that Western notions of biomedicine offer. This stage also revealed that new narratives were emerging that offered people with cancer opportunities to create and (re)write their own narratives about cancer that countered traditional and alternative medical (i.e. holistic medicine) healthcare discourses. This information proved useful in the design and production of the site by underscoring the importance of narrative in the way that people make sense of cancer.

Design and Production

The second phase of the study included an initial design of the web site based on the findings of the contextualization phase, and also included work with a small group of collaborators including M., her family and friends. A great deal of time during this phase was spent learning the technicalities of administering and creating an interactive, multimedia web site. The technical demands and tradeoffs of creating a web site constrained how one articulates a new media design practice. The first iteration of CancerShock included both videos and animations to support the ideas that emerged from the initial inquiry. This milestone gave way to the final and longest phase of the study.

Collaboration and Revision

Collaboration and revision involved work with thirty individuals who, knowing the goals of the site, were asked to offer feedback on general and/or specific aspects of the site. The collaborators not only provided feedback but also became partners in the production of the site. Because many of the collaborators were found through postings on public cancer-related mailing lists, most of the communication with them occurred through email, however, I was able to find participants locally who allowed me to personally observe them access and use CancerShock. Watching individuals interact with the site proved extremely helpful in improving the usability and interface of CancerShock. In the revision and collaboration phase I received a range of feedback from technical to conceptual to creative.

Conclusions

The key elements that emerged in this study were expressed through a reflective and reflexive design process that emerged in the creation of CancerShock. A new media pedagogy that incorporates a social and cultural sensibility is one that has the capacity to be self-reflexive in its awareness of its mode of address and assumptions and is reflective in its capacity to collaborate with its audience. This collaboration has the potential to move towards responsive media-based pedagogies that not only are able to address their audiences multiply but are also able to represent content and curriculum as fluid and changing. The implications of such an approach to educational technology practice frame educational new media as only one element among many in the fluid intersections of subjectivity, power, representation, and pedagogy that occur while learning. The social and cultural approaches to new media pedagogy that I have articulated, through the design and production process of CancerShock, suggest one way to shift the discourses of educational technology practice away from the language of certainty and predictability towards one that makes uncertainty, contingency, and context productive by attending to the complex social and cultural intersections that occur while learning.

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